

The Week



ASTHMA

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Introduction

Asthma is a long-term disease, often becoming severer and wider in scope. Britain's National Asthma Campaign estimates show that around 150 million people are suffering from asthma worldwide. Children and the elderly are particularly vulnerable to the disease which if contracted in childhood usually continues till old age. In most parts of the world, almost 15 per cent of children have asthma. Similarly, up to 10 per cent of adults suffer from asthma worldwide. Asthma is increasing all over the world; not only the number of patients but also the severity.

Most often asthma is an allergic reaction to weather, food or dust, or any other factor known

'trigger'. Recent research has shown that using paracetamol could trigger severe asthma attacks in some people.

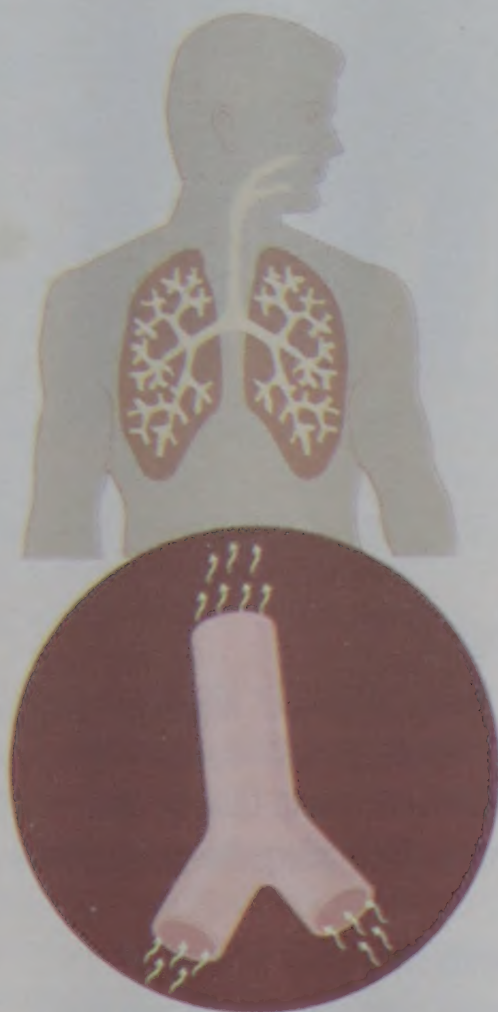
Though there is still no cure available for the disease, it can be effectively controlled. The best way to manage asthma is to prevent it. A long-term, multifaceted approach includes educating people, providing continual medical care and monitoring people who have asthma. Since the cause can be different for each person, patients should identify and avoid factors that cause or worsen asthma in them. Patients should be told that there is nothing to be ashamed about asthma. If they learn to manage asthma, they can lead a normal life.

What is asthma?

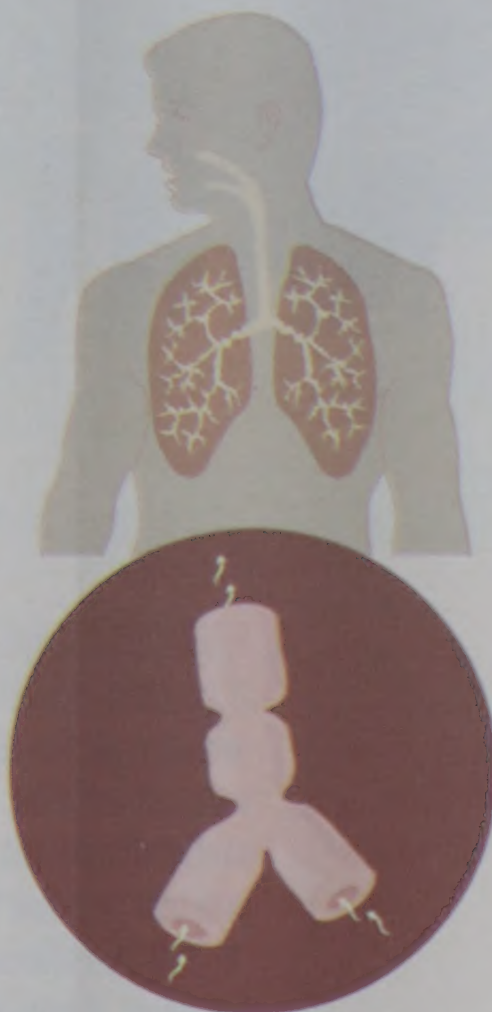
Asthma is a disease which affects the lungs and the airways of the lungs. In the normal course, we breathe in oxygen from the air and breathe out carbon dioxide. During asthma, breathing becomes difficult because airways in the lungs get temporarily blocked. The block occurs when the bronchial muscles constrict and the mucous linings inside the airways become inflamed usually in response to a trigger, such as cold air, cigarette smoke, exposure to irritants and specific allergens, emotional stress, and respiratory infections, both viral and bacterial. Breathing becomes even more difficult when the mucus clogs the airways causing coughing and wheezing.

There is also a situation in which the stomach contents, including the stomach acid, flows backward into the oesophagus. This is known as gastro-oesophageal reflex (GER). Over the past several years, there have been researches that strongly suggest a relationship between GER and asthma. Although the exact mechanism of this relationship is still unclear, it is thought that the presence of the concentrated acid in the oesophagus triggers a spasm in the bronchioles, producing asthma symptoms. In some cases it may be the cause of the asthma, while in other patients it may just be an

Anatomy of an asthma attack



When the respiratory system is working properly, the airways are clear and air flows easily in and out.



During an asthma attack, less air can get in and flow out because the muscles of the airways constrict. The inner walls get swollen and mucus clogs the passages.

Graphics/N.V. Jose



EXERCISE AND ASTHMA

If you feel breathless after running or jogging in cold and dry air for a few minutes, you have exercise-induced asthma. This does not mean that an asthmatic should not exercise. With adequate precautions you can prevent it.

- ◆ You can choose games that offer a break in between. If possible avoid cold and dry air and don't exercise hard and for too long.
- ◆ Take two puffs of your reliever inhaler ten minutes before exercising. This should keep your symptoms at bay for the next couple of hours.
- ◆ Take your preventer medications regularly. It is of no use if you take it just before exercise.

aggravating factor. When the acid enters the oesophagus, it triggers an allergic reaction in the bronchiole muscles. By using a medication that reduces the acid production, this mechanism can be stopped or reduced so that the patient experiences an improvement in his asthma condition. Some studies have shown that abnormal reflex is present in more than 80 per cent of patients with adult asthma. Those affected can prevent asthma attacks by avoiding acidic foods, particularly at night, quitting smoking and raising the head of their bed by about 6 inches.

However, some attacks start for no apparent reason. As air cannot flow in and out of the lungs freely, a whistling sound may be heard while breathing. In severe cases where there is too little air moving the wheezing may stop. At this stage the patient struggles to get enough oxygen. When these signs develop, it's time to seek medical help.

Doctors usually distinguish between two types of asthma, allergic and infectious. The infectious type resembles bronchitis accompanied by cough and wheezing.

Asthma is also of two types—intrinsic or extrinsic. Extrinsic asthma occurs when the symptoms occur in response to environmental allergens. It is intrinsic when the triggers that cause the airways to constrict are not external.

Asthma attacks can be mild, moderate, or severe, and can last for a few minutes, a few hours, or several days. They can occur anywhere and at any time, many occurring at night. Sometimes, there are warning signs that an attack is about to happen, but sometimes there aren't any.

CHECK FOR ASTHMA

- ◆ Do you have frequent attacks of wheezing?
- ◆ Do you have bouts of coughing and breathing difficulty at night or early morning?
- ◆ Do you get colds which cause breathing problem?
- ◆ Do you have difficulty breathing after running?
- ◆ If the answer to any one of these is yes, you must consult your doctor for asthma.

Symptoms

The symptoms of asthma can vary from person to person. Usually there is scratchy throat or tightness in the chest.

Breathing becomes difficult. There is wheezing or a whistling sound, accompanied by cough bringing out thick sputum. This often makes patients feel relieved. The bouts of cough are episodic and the patient is relatively free of symptoms between attacks. In many cases, periods of aggravation are seasonal. However, in severe and long-standing cases, the patients experience breathlessness throughout the year.

The attacks of wheezing are accompanied by sneezing and running nose. The patient experiences wheezing and cough usually at night or early morning.

While some patients may get only mild and occasional wheezing, there are patients who get symptoms all through the year and those who get symptoms only in particular seasons.

The severity of attacks also varies from person to person. In some cases the attack may be very mild requiring very little medication. Severe cases may require hospitalisation. It may even result in death.

Since there is a wide spectrum of severity treatment is usually individualised.

Triggers

Factors that cause asthma also vary from person to person. While many are allergenic to pollen, mold, animal hair, dust, mites and cockroaches, some people react to certain foods.

Strong odours and sprays such as perfumes, cleaning liquids, paints, and varnishes have an adverse effect on asthmatic patients. Changing weather conditions characterised by large variations in temperature and increased humidity seem to affect the asthma patient. Cold weather is one of the common irritants.

In some cases air pollutants, tobacco smoke, chalk dust, and even talcum powder could cause asthma symptoms. In fact, cigarette smoking is responsible for more than half of the asthma cases in people over 40.

In many cases exposure to fumes and dust at the workplace can cause or worsen asthma symptoms. These people show improvement in the symptoms when they stay away from work.

Even a work-out session triggers an asthma attack in some people. Instead of giving up exercises, the patient should consult a doctor.

Since some medicines such as aspirin can cause asthma, consult your doctor before you take any medicine.

Avoid food that use preservatives containing sulfites, such as tuna, dried apples and raisins, and wine.

It is not true that nasal allergy and asthma have little connection; about 40 per cent of patients who have nasal allergy develop asthma. The same irritants that cause rhinitis or swelling and excessive

secretion in the nose produce similar symptoms in the bronchial tubes. The airways constrict, the inner lining thickens and the mucus plugs the passage causing difficulty in breathing, and cough.

Both bacterial and viral infections may trigger asthma attacks, and in sinusitis, mucus draining into the nose, throat, and lungs can cause asthma symptoms.

Hardly ever the major cause, strong emotions such as anxiety, fear, strong excitement and nervous stress may precipitate asthma in some people. This may be because emotions and stress tend to weaken the body's defenses.

How is asthma diagnosed?

Diagnosing asthma is usually not difficult; a detailed account of the patient's symptoms and medical history is often sufficient.

The diagnosis can be confirmed by lung function testing, which will also assess the severity of the disease. It is essential to measure the lung function regularly to plan correct treatment. Hospitals use spirometry to evaluate lung function.

■ Lung function tests are necessary to measure the severity of the disease. These measure the vital capacity of the lungs or the maximum amount of air you can breathe in and out. Spirometry and peak flow measurements are the most clinically useful methods for testing lung function.

■ While peak flow meters are used at home by the patient, hospitals usually use spirometry, performed using computerised equipment. It has a mouthpiece through which the patient can blow in. While undergoing a spirometry, you have to breathe normally a few times and then inhale deeply. Then, blow out as hard and as fast as possible. Breathe in

HOW TO USE A PEAK FLOW METER

A peak flow meter is a tube-like device patients can use at home to assess their lung function. It helps the doctor diagnose asthma, know the severity of the attack and assess the effects of the treatment. By using the peak flow meter daily the patient can predict an attack and thus decide when to take medicine.

The meter has a scale with a marker. Before

using, set the meter to zero by sliding the the marker down.

Stand up and take a deep breath with your mouth open. Take care to keep your fingers away from the numbers on the meter. Close your lips firmly around the tube of the meter and blow as fast and as hard as you can.

Make suer you don't

put your tongue in the hole.

Soon after you have blown in, the marker goes up. Note the number where the marker has stopped. Repeat the action two times and note the number each time you blow in. The highest of the three numbers is your peak flow. It is an indicator of how open your airways are. If the number shows a drop, you need treatment for asthma.



CLASSIFY YOUR ASTHMA

You have mild asthma if:

- ◆ You have symptoms less than twice a week.
- ◆ You don't wake up at night to cough and wheeze.
- ◆ Your lung function is 80 per cent or more of your personal best as measured by spirometry or peak flow meter.

You have moderate asthma if:

- ◆ You have symptoms daily.
- ◆ You have sleepless nights with symptoms more than twice a week.
- ◆ Your lung function is less than 80 per cent, but greater than 60 per cent.

You have severe asthma if:

- ◆ You have symptoms continuously.
- ◆ Your symptoms aggravate frequently during daytime and at night.
- ◆ And, your lung function is less than 60 per cent of your personal best.

again. The computer will calculate the vital capacity along with certain other measurements of how fast you are able to breathe out.

■ You are normal when you have achieved the value predicted for a person of your particular ethnic origin, sex, age and height. A patient's measurements are called observed values. These are compared with the predicted values for each country,

THE PEAK FLOW ZONE SYSTEM

To know what to do when your peak flow number changes, arrange your readings into three zones.

Green says Go. Your disease is under control. Your breathing is good, without wheezing or cough. You can work and play without aggravating symptoms. (Use preventers when your lung function reading is more than 80 per cent of your personal best.)

Yellow signals Caution. You cough, wheeze and have a tight chest. Your symptoms appear at night. (Use relievers because your lung function reading at this juncture would be 50 to 80 per cent of your personal best number).

Red indicates Danger. It's time to take help from your doctor because the medicines are not working, you have a tough time trying to breathe. You can't walk or talk and your ribs show. (Your lung function now is less than 50 per cent of your personal best).

race and sex. Predicted values have a range that is considered normal. A personal best is the value the patient has when the disease is under control, which can be found out only through spirometry. For a patient, the personal best is the range to be achieved with treatment.

■ Spirometry offers an objective measurement of a patient's asthma, which a doctor's stethoscope may not often recognise.

The physician can assess the effect of treatment and in severe cases the degree of impairment. Spirometry is also useful in assessing a patient's

fitness before giving general anaesthesia for surgery. The surgeon can also assess the risk of post-operative complications.

■ In the case of allergies, first your symptoms are recorded. Clues to your problem might lie in your lifestyle, your work and home environments, your food habits, your family's medical history.

■ Skin testing is a sensitive tool to detect allergy. Small amounts of the suspected allergen are introduced into the skin. A swelling or flare in the surrounding area indicates the presence of allergic antibodies. However, skin tests cannot be used to diagnose food allergy.

■ Then there are tests which use blood samples to determine the extent of antibody production against an allergen.

■ The double blind food test helps you narrow down to the suspected allergen. In this test you are put on a special diet. By comparing how you reacted to each food you can determine which items are prime suspects. Tests to confirm whether the food allergy is present can then be done. Double blind test means that neither the patient nor the doctor knows which food item is being tested. You may have to follow a trial diet, which alternates days of consumption and avoidance of suspected foods.

Treatment

The aim of treatment is to control asthma using as little medication as possible. The regimen is decided according to the severity of your symptoms. Medications should change as symptoms change.

Treatment today includes regular use of preventers to stabilise the disease and relievers to provide relief from symptoms.

Relievers or bronchodilators

The bronchodilators dilate or increase the diameter of the airways by relaxing the constricted muscles around the air passages. The air now passes with greater ease. Because the patient gets quick relief from the symptoms, these drugs are also called relievers.

In most cases, relievers prescribed to be taken when symptoms occur are inhalant Salbutamol, Salmeterol or Albuterol (available in the market as Asthalin, Ventolin, Proventil). Other relievers include Theophylline, Prednisolone tablet, Aminophyllin and Deriphyllin injections, Terbutaline (available as Bricanyl) and Ipratropium bromide (available as Ipratropium rotacaps).

Preventers or anti-inflammatory drugs

These drugs reduce inflammation or swelling of the lining in the airways caused by inflammation and accumulation of mucus. Since they also prevent inflammation when taken for a long time, they are also called preventers. Some of the commonly prescribed preventers for long-term treatment of chronic asthma are inhaler Corticosteroids:

Beclomethasone dipropionate (available in the market as Becoride, Beclate), Budesonide (Budecort, Pulmicort), Budesonide turbuhaler, Flunisolide, Fluticasone (Floahale rotacap and inhaler) and Triamcinolone. Some other preventers are Cromolyn sodium or disodium cromoglycate (Intal, Cromal).

Side-effects such as cough, hoarseness or a fungal infection of the throat can be avoided by using a spacer or by rinsing your mouth with warm water after taking the medicine. You can prevent the symptoms by using the inhaler just before food.

Steroids

Inhaling corticosteroids are the most commonly prescribed solution to asthma.

However, patients are often apprehensive about using corticosteroids which they associate with the steroids that athletes take for extra energy. Patients should be told that corticosteroids are anti-inflammatory medications for treating allergic conditions, asthma and other diseases. Corticosteroids are one of the body's natural steroids and related to cortisol, a hormone produced by the adrenal gland to keep us from becoming seriously ill.

Corticosteroids decrease inflammation in the airways.

Corticosteroids are available in the market as

inhalers, nasal sprays, pills or syrups, injections and intravenous solutions.

Inhaler versions are the most commonly prescribed corticosteroid which may also help reduce symptoms associated with chronic bronchitis or chronic obstructive pulmonary disease.

The preventive inhaler corticosteroids—Beclomethasone available as Beclate (50, 100, 200, 250), Becoride (forte) and Budesonide marketed as Budecort (100, 200), Budez (100, 200) and Pulmicort—have to be used regularly irrespective of the symptoms.

During severe attacks, the patient may need an occasional short-term use of oral steroids.

Steroid tablets are prescribed for a short-term therapy and also as part of maintenance therapy.

Cases of chronic severe asthma may require the use of oral steroids for long periods.

When you are on oral steroids make sure you get proper nutrition. Include citrus fruits and fruit juices in your diet. While on medication you may lose calcium and potassium, but consult your doctor before taking any mineral supplement.

Since corticosteroids can increase your appetite, be sure to have only low-fat, low-sugar items.

For best results it is important that the patient follows the therapy as prescribed by the physician. Regular treatment will help reduce the frequency and severity of daytime and nighttime symptoms, besides reducing the need for reliever drugs. The patient's lung function improves, thus reducing the number of emergency hospital visits. The best way to take your drugs is by inhalation.

Inhalation treatment

Most of the drugs prescribed for asthma can be inhaled.

SEEK HELP IF

- ◆ Your quick-relief medicine does not help for very long.
- ◆ Your breathing continues to be fast and hard even after treatment.
- ◆ Your fingernails or lips turn gray or blue.
- ◆ You have difficulty talking.
- ◆ You feel as if your neck, chest, or ribs are pulled in each time you breathe.
- ◆ Your heartbeat is fast.

When you deliver your drug using an inhaler, the relief is almost instant. The quantity of the drug required is very small, and hence side-effects are few. Inhalers are economical, handy and portable, and easy to use.

Now, several types of devices are available to deliver these drugs by inhalation. These are:

Metered inhaler

Spacer

Dry powder systems

Nebulisers

Spacer is a device that helps the patient use the inhaler more effectively. It is a plastic conical chamber of 500 to 750 ml capacity, made up of two halves. On one side is a slot into which the inhaler is fitted. The other end has a mouthpiece where the patient can breathe in the medicine.

Some spacers come with a valve in the mouthpiece that closes when the patient breathes out so that the exhaled air does not re-enter the chamber.



HOW TO USE AN INHALER

1. Remove the cap and shake the inhaler.
2. Tilt your head slightly backwards and breathe out.
3. Hold the inhaler inside the mouth or just in front of your mouth.
4. As you breathe in slowly, press down the inhaler.
5. Hold your breath for 10 seconds.
6. Breathe out slowly.

Dos

- ◆ Breathe in while pressing the inhaler.
- ◆ Inhale deeply.
- ◆ Hold breath after breathing in.

Don'ts

- ◆ Don't breathe out while pressing the inhaler.
- ◆ Don't inhale too quickly.
- ◆ Don't breathe through the nose.
- ◆ Don't press the inhaler more than once.

How to use a spacer

1. Shake the inhaler and insert it in the slot provided in the spacer.
2. Breathe out.
3. Hold the spacer horizontally and hold the mouthpiece close to your mouth.
4. Press the inhaler once so that the drug is released into the spacer.
5. Breathe in slowly and deeply.
6. Hold your breath for 5 to 10 seconds.
7. Remove the spacer and breathe out.

The spacer is useful for people who cannot use the inhaler properly. With a spacer, the patient gets more time to inhale the medicine than when using a metered inhaler. Moreover, a spacer allows more drug to enter the lungs.

Although only 15 per cent of the puff, which is adequate for producing beneficial action, enters the lung, the remaining 85 per cent deposits in the spacer itself instead of getting deposited in the throat as in the case of an inhaler, causing side-effects.

A spacer is a more convenient mode of delivering medicines for children. It can be used for infants by fitting a face mask.

Another method of delivering anti-asthma drugs are the breath-actuated dry powder systems.

One such system is the rotahaler-rotacap systems, used to generate powder aerosol. The drug is usually mixed with lactose and come in capsules which are inserted into a slot in the rotahaler. The capsule breaks into two when the lower part of the device is twisted. Then the patient has to breathe in; the air current converts the drug into aerosol which is then carried into the lungs as the patient inhales.



**Breathe
easy:**
(From left)
Nebuliser,
peak flow
meter and
spacer

It can be used by young children and adults who are unable to operate the inhaler.

Turbohaler is another dry powder device.

Nebuliser

A nebuliser consists of a small plastic chamber with a lid and a source for compressed air. The drug is poured in the nebuliser and the air-flow to the nebuliser changes the medication into vapours which can be inhaled through a mouthpiece. The vapours stand a greater chance of reaching even the small airways, thus increasing the drug's



*Photo/***Benny Paul**

effectiveness.

Drugs for using in nebulisers are known as respiratory solutions. These are different from solutions for injection and so check the drug and the dose with your doctor.

How to use a nebuliser

1. Measure the correct dose of medication and add this to the nebuliser. Set all connections.
2. Attach a mouthpiece or a facemask to the nebuliser.
3. Turn the compressor on.

4. Put the facemask on.
 5. Hold the nebuliser in an upright position.
 6. Breathe in and out gently.
 7. Continue breathing till the entire drug is finished.
- It usually takes 5 to 10 minutes for the drug to be inhaled.

Clean the nebuliser after each use

Dip the device in a solution of one part vinegar and eight parts water for around 20 minutes.

Rinse in warm water and dry before storing.



Children and asthma

Asthma is the one of the most common diseases of childhood. Most children with asthma have an asthmatic parent or a family history of the disease. Before puberty, asthma occurs more often among boys than girls. After puberty, the incidence is equal between the genders. Asthma can be so debilitating that often it reduces the child's ability to move around. This may harm his or her self-image.

You can help children avoid asthma by identifying irritants that may trigger an attack and eliminating them as soon as possible.

In some asthmatic children an extremely



Asthma can be so debilitating that often it reduces the child's ability to move around.

children who develop asthma between ages 2 and 4 will stop having asthma attacks after an age, say, 10 or 12. But it does not mean they have outgrown the disease; it may recur when they reach their 30s or 40s.

In many cases, parents underestimate the child's disease. This can delay treatment. Some other factors that put the child in a high-risk category are under-use of steroids and non-compliance of the prescribed treatment.

Asthma among children can be divided into mild, moderate and severe, depending on their family history, symptoms, lung function tests and medication. Children with mild asthma have attacks up to one each week. The attacks can be controlled

frustrating, frightening or upsetting situation may trigger some wheezing. But this does not mean that you don't discipline your child. Talk to your child when she is fine and explain that you love her, but that everyone must live by certain rules.

Many asthmatic children suffer from other emotional problems. They often suffer from feelings of inferiority because they can't participate in peer activities. These emotional problems may lead to depression.

Prognosis

About 50 per cent of

using bronchodilators. They have good school attendance, and exercise and sleep well.

Those kids with moderate asthma show the symptoms more frequently, more than once every week. They cough and wheeze and may have disturbed sleep. They need regular medication rather than quick reliefs.

Some develop severe asthma, usually perennial rather than seasonal. This type of asthma is traumatic as it can be incapacitating and affects general activity. Children may not eat and will not lie down. They are forced to stay away from school and general activity. They require continuous and systematic medical treatment.

Children can be taught to use inhalers for effective delivery of drugs. Spacer is better suited for children because it retains the medicine for a longer duration than an inhaler. Another device for easy delivery of medicine is the nebuliser. Since there are safe and effective ways of treating asthma, children should be taken to the doctor and not allowed to suffer its symptoms.

Allergies and asthma

Allergy is the leading cause of asthma, and about 90 per cent of children under the age of 10 with asthma have allergies. About 70 per cent of people under 30 with asthma and 50 per cent of those over 30 with asthma also have allergies. Pollen from trees, grasses and shrubs is one of the most common allergens for asthmatics.

Allergy is likely to be a contributing factor to asthma if:

- You have close relatives with allergy.
- Asthma begins at a young age.
- Symptoms occur or worsen with different seasons.
- You have allergic symptoms like runny nose, hay fever, or eczema.
- Tests show you have a high count of eosinophils cells that fight infection, in your blood or saliva.

You can manage allergies:

You can control allergy by treating asthma with anti-inflammatory drugs delivered by an inhaler.

You should observe the pattern of your disease

MANAGING YOUR ALLERGIES

- ◆ The tendency to develop allergies is inherited.
- ◆ If you have allergic tendencies and are exposed to certain substances in your environment, you may develop allergies to some of those.
- ◆ These substances are called allergens, which may be pollen, molds, dust, insects, cockroaches and mites.
- ◆ Symptoms of allergy include itchy eyes, runny nose, asthma symptoms, eczema and rash.
- ◆ You may have one or more of these symptoms or different symptoms at different times.
- ◆ The timing of the allergic response may be immediate or delayed. Usually symptoms of asthma or of rhinitis begin within half an hour of exposure to the allergen.
- ◆ Be on the look out for the allergen; you can prevent a reaction by avoiding it.
- ◆ Consult your doctor for allergy tests.

HOW TO CONTROL POLLEN ALLERGENS

- ◆ Keep windows and doors shut during pollen season.
- ◆ Do not venture outdoor during the midday and afternoon when pollen exposure is highest.
- ◆ If you have identified the allergen generating plant, remove it from your surroundings.

to identify the allergen. Having identified the miscreant the next step is to decrease or eliminate exposure to the offending factor. This is environmental control.

Eggs, milk, nuts, soy, seafood, fish, corn and wheat are the most common allergy-causing foods.



Studies have shown that allergy and asthma symptoms may improve if environmental control or changes are made. Many of the changes are for the entire home, especially the bedroom.

Though desensitisation by immunotherapy is another option, it is not widely recommended because it is a tedious, painful procedure which can be dangerous too.

It is recommended only when drugs are not able to adequately control asthma or avoidance is not possible.

Asthma and food allergy

A recent study suggests that about 5 per cent of the population may suffer from adverse reactions to food. The most common symptoms are vomiting, nausea, stomach cramps, diarrhoea, eczema, headaches, asthma, earaches and rhinitis.

Eggs, milk, nuts, soy, seafood, fish, corn and wheat are the most common allergy-causing foods. If you are allergic to a particular food, you might be allergic to related foods too.

Asthma and pregnancy

Asthma can be controlled effectively during pregnancy and studies show that it does not increase the chances of defects to the baby.

The management as always includes a review of your history, identifying your triggers and assessing your lung function using spirometry. The treatment is aimed at helping you breath well.

During pregnancy:

- Know your triggers and avoid them.
- Keep a watch for early warning signs of an asthma and treat them immediately.
- Avoid cigarette smoking or exposure to smoke.
- Shortness of breath is common during pregnancy and so you should be able to differentiate between asthma and the expected shortness of breath. You should also know that fatigue is different from shortness of breath.
- Use a peak flow meter to monitor your asthma regularly.
- Try to avoid all medications during pregnancy. But it is more important to control your asthma for the sake of your baby's health, and so take the prescribed medicines.

Research shows that breastfeeding for the first 12 months may help prevent or delay certain allergies.



- Always inform your obstetrician about your asthma and the treatment.
- Studies have shown that inhaled steroids are quite safe when taken in recommended doses.
- Use your inhaler regularly to prevent attacks.
- A severe asthma episode may require hospitalisation and frequent nebulised treatments, oxygen, intravenous corticosteroids and/or theophyllin.

Before delivery, plan the availability of asthma medication. Prefer local anaesthesia to general anaesthesia so that you can use your inhaler.

In a Caesarean section you may need intravenous theophylline or corticosteroids.

How safe is breastfeeding?

When breastfeeding, the use of most asthma medications does not affect your baby or interfere with your milk production. Research even shows that breastfeeding for the first 12 months may help prevent or delay certain allergies.

Though steroid tablets and antihistamines pass through breast milk in trace amounts, they have not been found to cause any problem. Theophylline has occasionally been associated with jitteriness and vomiting in the baby.

Some drugs may worsen asthma

Ten per cent of all asthma patients are sensitive to aspirin and other anti-inflammatory medications. These people may develop severe, hard-to-control attacks when they take these drugs.

If you are aspirin-sensitive, avoid all nonsteroidal anti-inflammatory drugs (NSAIDs). Look for the word salicylate in the active-ingredient list to identify products containing aspirin.

- Cold tablets
- Antihistamine and cold combination pills
- Medications for menstrual symptoms
- Some suntan lotions
- Some drugs for blood pressure

Beta-blockers (beta adrenergic antagonists) used to treat migraine headaches, glaucoma, rapid heart rate, high blood pressure, tremors, and other conditions can also cause or worsen asthma. Remember to tell your doctor that you have asthma because it may be necessary to use an alternative



Asthmatics may develop severe, hard-to-control attacks when they take some drugs.

drug if beta-blockers are prescribed for any condition. Even beta-blocker eye drops can precipitate asthma.

■ Some asthma medications themselves can worsen the situation

Theophylline medications prescribed to help control asthma can occasionally aggravate the condition at night by increasing stomach acid. Nighttime reflux could trigger asthma attack in some people. If you're on this medication and have frequent acid problems, talk to your doctor about the dose.

Common queries about asthma

Will I have to limit my activities because of asthma?

Most people with asthma can live a full and active life if they are on medication. You must avoid things that can trigger your asthma. Consult your doctor about taking medicine that may help prevent an asthma attack, for example, before exercising, on cold and dry days, on days when the pollen count is high and when pollution is bad.

How can I tell if my treatment is working well?

The treatment is proving effective if.

- You have no symptoms or only minor symptoms.
- You can sleep through the night without waking because of cough and wheezing.
- Asthma does not keep you away from school or work.
- You can exercise without getting any attacks.
- You don't need hospitalisation because of symptoms.

Do children outgrow asthma?

Children don't outgrow asthma completely. About 50 per cent of children who develop asthma be-



IF YOU HAVE AN ASTHMATIC AT HOME

- ◆ Keep things that trigger asthma attacks out of home; don't let pets inside the house.
- ◆ Don't smoke inside the house; quit smoking.
- ◆ If the person is allergic to odours, keep away strong-smelling soaps, shampoos and incense sticks.
- ◆ Dust, paint or vacuum the house when the person is away.
- ◆ Use dust-proof covers preferably with zippers on the mattress and pillows.
- ◆ Don't use rugs and carpets, soft chairs and cushions in the patient's room. These collect dust.
- ◆ Use sheets and blankets washed in hot water and sun-dried.
- ◆ Don't let the room get hot and stuffy; open windows to keep the air fresh.
- ◆ Close windows when the air outside has smoke, dust, vehicular exhaust, or pollen.
- ◆ Air out the house before the asthma patient returns.

tween 2 and 10 years of age will stop experiencing symptoms after some time. But asthma may recur when they reach their 30s or 40s. So asthma among children should be treated.

How long does an asthma attack last?

The duration of an attack depends on the severity of the attack. Mild episodes may last only a few hours. Severe episodes, however, may go on for days or weeks.

Are you born with a tendency to get asthma?

Those who already have a blood-relative suffering from asthma are usually born with the disease. If both parents of a child have asthma, the risk of the child developing asthma is greatly increased. People without a family history of asthma can also get asthma.

Why does exercising cause asthma?

Usually, the air you breathe in is humidified and warmed when it passes through the nose. But during exercise, you breathe rapidly through the mouth. As a result, the air which reaches the bronchial tubes is cold and dry which can trigger asthma. Six to eight minutes of aerobic exercise can induce asthma symptoms. Over 70 per cent of all asthmatics experience some degree of exercise-induced asthma.

Should asthmatics avoid sports and exercise?

Asthmatics need not avoid sports or exercises completely. However, they must take care to avoid sports that involve running for a long time. This is because aerobic exercises are more likely to provoke asthma attacks than non-aerobic sports. Swimming in humid conditions is one of the best sports for

ASTHMA AT A GLANCE

- ◆ Asthma attacks usually start slowly.
- ◆ You can prevent it if you notice the warning signs early and take your medicine.
- ◆ Learn what your warning signs are.
- ◆ Discuss with your doctor and take the medicines regularly.
- ◆ Use the peak flow meter regularly to check for warning signs.
- ◆ Avoid allergens and allergenic food.
- ◆ Follow a nutritious and balanced diet.

Early warning signs

- ◆ You have disturbed sleep due to cough and wheezing
- ◆ You wake up early in the morning with cough and wheezing
- ◆ Your reliever does not give you long-lasting relief
- ◆ Sudden drop in peak flow rate

asthmatics. In most cases, exercise induced asthma can be controlled to allow participation in any sport. Many Olympic athletes have had asthma.

Are inhalers dangerous if used for a long time?

If you are an asthmatic you should be on inhalers. It is a myth that inhalers are addictive. But you should make sure that you are using the inhaler correctly, and that the container is not empty. Even while on inhalers if your asthma worsens, you probably need your doctor's help immediately.

Is asthma a psychological disorder?

Asthma is not a psychological disorder, but emotions can worsen it. Scientists have found that strong emotions can cause the bronchial tubes to constrict. Asthma can cause emotional strain; asthmatics often experience depression because they cannot participate in normal activities. Asthma is a leading cause of school absences, which can have far reaching effects on the child's emotional well-being. It can be an emotional and financial strain on the family.

Can asthma be fatal?

Asthma can be life-threatening in severe cases where the airways get blocked completely and breathing becomes impossible. However, the attack can be controlled with medications. Asthmatics should learn the warning signs to prevent attacks. Deaths are more due to delay in administering therapy.

Is prevention the best treatment for asthma?

Yes, prevention is always the best treatment. An asthmatic should know what conditions prompt an attack so that he can avoid them whenever possible. But if it is impossible to avoid the causes, preventive treatment is desirable. There are various forms of preventive therapy. If you have exercise-induced asthma you can start medications before exercising. You may have to take medicines regularly if your asthma attacks are frequent or unpredictable. Drugs used for this purpose include inhaled or oral beta agonists, cromolyn and inhaled or oral steroids and theophylline. For allergic asthmatics, immunotherapy may offer relief from allergens that cannot be avoided.

What is non-drug treatment for asthma?

Non-drug treatment does not mean that you can avoid drugs completely. It is a more holistic approach to managing asthma. But it helps the patient reduce drug consumption and a reduced need for antibiotics and steroids. This in the long run improves the quality of life and self-confidence. However, the patient should know about the disease, how to control it, the proper diet and exercise. Half the job is done if you identify your triggers. This helps you avoid the allergens and take immediate action in case of an attack. If it is smoke you can move away or if it is food you can avoid eating it. Knowing the trigger will help you control the disease.

What is the recommended diet for an asthmatic?

Your diet should include green leafy vegetables. You should also eat fruits like apple, papaya, mangoes, salads like carrot and beetroot. These coloured vegetables contain a chemical called flavonoid that is anti-allergic. Drink a lot of water during the day. A glass of hot water in the morning will help loosen the sputum. Eat frequently rather than having two or three meals. Don't sleep after a heavy meal. An asthmatic should avoid deep fried food like puri and also sour foods like curds and lassi. Avoid bananas and raw onions. Ice cream and cold drinks are not good for asthma.

What exercises are helpful for an asthmatic?

An asthmatic can benefit from breathing exercises like blowing a balloon or an air pillow to improve lung function. You can also blow into a bowl of water using a straw. *Pranayam* or the breathing exercise in yoga also helps improve lung power.

To prevent an asthma attack, take medicines before exercising, on cold and dry days, on days when the pollen count is high and when pollution is bad.



TIPS

People with asthma can have normal, and active life. By controlling asthma they can work, play and sleep well at night.

Stay away from things that start your asthma attack. There are many things that trigger an asthma attack and these factors can vary from person to person. So identify your trigger and avoid it.

Take preventers prescribed by your doctor regularly.

IF YOU HAVE ASTHMA

- ◆ Use foam or cotton pillow
- ◆ Use a plastic cover for the bed
- ◆ Avoid carpets and cushions
- ◆ Avoid foods with sulfites
- ◆ Cover your nose and mouth while going outside in cold weather
- ◆ Vacuum and dust often, but use a scarf or mask to cover your face

Visit your doctor regularly and discuss your problems.

If you have exercise-induced asthma, ask your doctor about when you should take medicines. As soon as you get an attack take two puffs of the inhaler and if symptoms do not subside seek medical help.

When you know there is asthma in the family, you can keep your baby from getting asthma. Women when pregnant should stay away from tobacco smoke. Put a dust-proof cover for the baby's bed. Make your home as irritant-free as possible.

Dust is another problem. Use minimum number of carpets, cushions and draperies.

Do not let pets inside. Keep the pet as clean as possible, shampooing it frequently, and vacuuming all the areas where it hangs out.

Both blankets and pillows should be washed on a monthly basis, and sheets changed each week.

These measures may provide a little comfort to a person with asthma, they are often just enough to turn the situation around. Asthma is nothing to be ashamed of.

Ayurveda for asthma

Ayurveda is the science of healthy and disease-free living. There are guidelines which, if strictly followed, promise freedom from all ailments.

Diagnosis in Ayurveda is based on sound principles. For diagnosis the physician relies on:

The physical appearance of the patient.

Touch or pulse rate of the patient.

Questions posed to the patient.

Once the disease has been diagnosed treatment is decided according to the patient's physical composition. Hence, treatment cannot be generalised; it is individualised.

According to Ayurveda, a healthy body has three humours: *vata* (air), *pitta* (bile) and *kapha* (phlegm) in proportionate quantities. In asthma there is an excess of phlegm and air in the body. The aim of treatment, therefore, is to restore the balance of humours; asthma recedes once the levels of phlegm and air become normal.

Ayurveda has a wide range of medications for asthma which vary from person to person. The treatment is generally long-term and involves



several steps.

First the stomach is cleansed to remove all wastes. This is because all maladies have their root in the digestive system.

Swetakriya:

This involves excreting perspiration from the body to remove phlegm and other waste deposited in the chest.

Sometimes the patient is made to inhale medicated vapours after the perspiration treatment.

Asthma treatment also involves *Urovasti* where the medicated oil is made to collect on the chest. Some of the oils used are *Balaswagandhadi* and *Ashwagandhadi taila*.

There are some medicines to be taken orally such as *Dasamoolakatutracharya kashayam*, *Nayopachaya kashayam*, *Balakooladi kashayam*, *Vilvadi kashayam* and *Balajeerakadi kashayam*.

Some other oral prescriptions are *Kanakasavam*, *Vasarishtam* and *Dasamoolarishtam*.

Remember that all the medicines should be used only as prescribed by the physician.

Massages are prescribed only when other modes of treatment fail to give the desired effect.

Massages

Some body massages prescribed for asthma are *njavarakkizhi* and *pizhichil*.

The massages of Kalari, the martial art form of Kerala, are effective treatments for various diseases including asthma. Though essentially based on Ayurveda, Kalari medicines and their ingredients are different. However, treatment in Kalari starts with oral medicines and yoga.

Yoga postures part of the therapy are *Sarvangasana*, *Mastyasana*, *Yogamudra*, *Marjaryasana* and *Suryanamaskar*. Clearing the nasal passage using *netikriya* is also important. You should note that exercises are effective only when they activate all the systems of the body and not just one part, such as the lungs in the case of asthma.

Massages are prescribed only when other modes of treatment fail to give the desired effect. Kalari offers separate massages:

- For physical relaxation.
- For regaining health and rejuvenation (part of treatment for diseases).
- To increase flexibility of the body, usually opted by acrobats, dancers.

The aim of the massages is to:

- Balance the *chakras* of the body.
- Balance the *saptadhatu*s or the seven elements in the body.
- Balance the seven tissues of the human body (plasma, blood, muscle, fat, bone, bone marrow and semen).
- Stimulate *nadisutra* points or nerve centres.
- Stimulate *marmas* or the 107 vital points of the body. During treatment the points specific to the disease are stimulated.



■ Stimulate the vital points on the feet and fingers.

■ Awaken the *prana* (vital energy) and senses.

Thumping the nerve centres in the lower back and the centre of the head with cupped palms is one way of achieving this.

Though each system of medicine prescribes its own therapy, a holistic approach would be most effective. Even as you take drugs, meditate and practice breathing exercises and yoga to increase lung function. This will help you keep the disease under control.

For information

To know about asthma check out:

www.e-asthma.com

www.childrendoc.com/asthma

www.allernet.com

www.quickcare.org/resp/cough.html

www.allergy.mcg.edu

www.aaaai.org

www.asthma.about.com

www.efanet.org

www.pslgroup.com

www.lungusa.org/asthma

www.onhealth.com

www.respiratorycare.medscape.com/PCI/asthma

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